

GUNNE, Kh.E.; SURGUCHNEVA, M.V.

~~Radioactive~~ liquid level indicators. Priborostroenie no.9:26-27
S '57. (MIRA 10:10)

(Liquid level indicators)

(Radioactive tracers--Industrial applications)

ГЛАВНЕ, Кн. 4.

Sponsoring Editor: V. I. Dymshin, Academician (Nep. Ed.), M. K. Smolovskiy (Dop. Ed.), Yu. S. Zolotarev (Dop. Ed.), L. E. Tsvetkovskiy, S. P. Markov, L. A. Pavlovskiy and M. G. Zolotarevskiy (Secretary).

Ed. of Publishing House: P. M. Belyanin, Tech. Ed., T. P. Polenova.

FOREWORD: This book is intended for specialists in the field of machines and instrument manufacture who use radioactive isotopes in the study of materials and processes.

CONTENTS: This collection of papers covers a very wide field of the utilization of tracers in the field of industrial research and control techniques. The topic of this volume is the use of radioisotopes in the machine and instrument-manufacturing industry. The individual papers discuss the applications of radioisotope techniques in the study of metals and alloys, problems of friction and lubrication, metal cutting, engine performance, and defects in metals. Several papers are devoted to the use of radioisotopes in the automation of industrial processes, recording and measuring devices, quality control, flowmeters, level gauges, safety devices, radiation counters, etc. These papers represent contributions of various Soviet institutes and laboratories. They were published as transactions of the All-Union Conference on the Use of Radioisotopes and Stable Isotopes in Machine Building, National Economic Science, April 12-13, 1957. No personalities are mentioned. References are given at the end of most of the papers.

Auzan, Ya. A., V. E. Barabek, G. E. Dume, I. M. Tsvetkovskiy, A. B. Tsvetkovskiy, P. P. Chaplinsky, A. V. Dymshin, and V. V. Zolotarevskiy (Institut fiziki atomov, Akademiya Nauk SSSR, Moscow, "Atomizdat" Press, 1957, 128 pages, 100,000 copies, 100,000 rubles). Latvian Sci. Ed. "Komsomol" and "Priznaniye" Plants). Automation and Control Equipment With Radioactive Isotopes 259

Serzhin, V. G. (Vsesoyuznyy nauchno-issledovatel'skiy uchebnyy institut - All-Union Scientific School Institute). Gamma Rays With Crystal Triodes 264

Klesner, L. S. Evaluation of the Minimum Necessary Charge of Counters in a Gamma Ray 265

Smolovskiy, M. M., Yu. V. Gushchikov, and M. I. Zolotarevskiy (Institut avtomaticheskogo upravleniya - Institute of Automation and Telemechanics, Academy of Sciences, USSR). Use of Radioactive Isotopes for the Automatic Control of the Flow of Liquids 267

Kryzhanovskiy, V. V., I. I. Saryants, and V. A. Yanushkevich (Institut fiziki atomov, Akademiya Nauk Latvyskoy SSR, Riga, "Latvian Sci. Ed. "Komsomol" and "Priznaniye" Plants). Use of Short-lived Isotopes in the Control of the Process of Steel Strip Manufacture 271

Smolovskiy, M. M., and L. V. Melnikar (Institut avtomaticheskogo upravleniya AN SSSR - Institute of Automation and Telemechanics, Academy of Sciences, USSR). Use of Radioactive Radiations in the Noncontact Control of the Volume and Velocity of a Stream of Gas 276

Kabo, Ya. Ye., and D. M. Ziv. Use of Alpha Particles for the Measurement of Gas Density 280

Yordan, G. G., K. S. Furman, and G. O. Koyan (Nauchno-issledovatel'skiy institut teploenergeticheskogo priborostroyeniya - Scientific Research Institute for Heat-Power Instrument Making). Equipment for the Automatic Control of Gas Flow by Means of Beta Radiation 285

Peloni, P. A., L. V. Melnikar, and M. I. Zolotarevskiy (Central'nyy nauchno-issledovatel'skiy institut shelkovoy promyshlennosti - Central Scientific Research Institute of the Silk Industry). Use of Radioactive Isotopes for the Dissipation of Electrostatic Charges in the Silk Industry 289

(S) UNCL, KF L

PHASE I BOOK EXPLOITATION

SOV/4461

Akademiya nauk Latvyskoy SSR

Nauka - proizvodstvu; kratkiye annotatsii rabot, vypolnennykh dlya promyshlennosti i stroitel'stva, vyp. 4 (From Science to Production; Short Annotations of Work Accomplished for Industry and Construction, Vol.4) Riga, 1959. 119 p. 1,000 copies printed.

Editorial Board: S. B. Aynbinder, Candidate of Technical Sciences, M. P. Zakis, Candidate of Economic Sciences, A. K. Malmeyster, Corresponding Member, Academy of Building and Architecture SSSR, P.N. Olintsov, Corresponding Member, Academy of Sciences Latvyskaya SSR, and K. K. Plaupe (Resp. Ed.) Academician, Academy of Sciences Latvyskaya SSR; Ed.: Ch. Shklennik; Tech. Ed.: R. Bokman.

PURPOSE: This book is intended for construction and industrial scientific personnel, especially those concerned with the use of radioactive isotopes.

COVERAGE: The book contains 44 articles presenting the results of work accomplished at institutes of the Latvian Academy of Sciences in 1958. The articles, which deal with assorted problems in the mechanical, building, and chemical

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industries, are grouped in the following sections: automation and mechanization of industrial processes, machinery construction, construction and construction materials, chemical technology, and industrial economy. References accompany individual articles.

TABLE OF CONTENTS:

Introduction

AUTOMATION AND MECHANIZATION OF INDUSTRIAL PROCESSES

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Radioactive Tagging of Welded Butts in Uninterrupted Hot Rolling
[Institut fiziki (Institute of Physics), TsNITMASH (Central Scientific Research Institute of Technology and Machinery), and Makeyevskiy metallurgicheskiy zavod imeni S. M. Kirova (Makeyevka Metallurgical Plant imeni S. M. Kirov)]

7

Workers of the Institute of Physics, A. A. Genis, I. M. Taksar and V. A. Yanushkovskiy, worker of the TsNITMASH, instructor in uninterrupted-rolling operations, A. N. Iroshnikov, and engineer of

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the Makeyevka Metallurgical Plant imeni S. M. Kirov, V. A. Machkovskiy, took part in the development of the tagging method.

URAP-3L Universal Radioactive Instrument [Institute of Physics, and Tallinskiy zavod KIP(Tallin KIP Plant)]

The circuit of the instrument was developed by workers of the Radioactive Checkup-Method and Automation Laboratory of the Institute of Physics, Kh. E. Gunne, V. N. Pozdnikov, and V. A. Yanushkovskiy.

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RPRU-5-Type Radioactive Recorder of the Level Position [Institute of Physics, Tallinn KIP Plant, and Slantsekhimicheskiy kombinat "Kiviyli" ("Kiviyli" Shale Chemical Combine), Estonskaya SSR]

Workers of the Institute B. V. Barabanov and V. Ya. Yanushkovskiy, workers of the KIP Tallinn Plant, V. M. Znamenskiy, K. Yu. Varandi, and K. K. Shpor, and worker of the "Kiviyli" Combine, I. S. Stekol'shchikov, took part in the development and implementation of the instrument.

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S/798/61/000/000/009/012

AUTHOR: Gunne, Kh. E.

TITLE: Experimental determination of the statistical dependability of a radioactive relay with hysteresis.

SOURCE: Radioaktivnyye islucheniya i metody ikh issledovaniya.
Inst. fiz. AN LatvSSR. Riga, Izd-vo AN LatvSSR, 1961, 101-108.

TEXT: The paper expounds a methodology for the experimental determination of the statistical dependability of a radioactive relay with hysteresis regarded as operating at that counting rate at which the probability of spurious switching is maximal. The methodology affords a possibility of the tentative determination of the statistical dependability of a radioactive relay at other counting rates also. Among the many complex parameters of the radiation-emitter, relay, and actuator configuration, including the statistical dependability, promptness of response, sensitivity threshold, and radiation degradation, the requirement of an adequate statistical dependability (absence of spurious switchings) places a lower limit on the activity of the radiation emitters, a reduction of which is desirable from the point of view of safety. There are two difficulties: (1) It is difficult to design a radioactive relay analytically with a practically desirable degree of dependability; (2) it is difficult to test each mass-production relay for its statistical dependability. The limitation of the dependability concepts outlined in the literature (3 Soviet-only references) lies in their practical applicability to low-dependability relays (10 or more spurious
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switchings per hour) only, since tests of acceptable relays would require an excessive time. These existing methods take into account the ground state of the relay only; actually the statistical dependability of a hysteresis-affected radioactive relay is more significant in the threshold zone between actuation and release, where the probability of spurious switching (PSS) is greatest, and at that counting rate at which the PSS attains a maximum. The proposed method employs one of the following four quantities as a characteristic of the dependability of a radioactive relay (in stationary operating conditions): (1) The probability of the absence of spurious switching in a unit time; (2) the mean number of spurious switchings in a unit time (e.g., in one hour); (3) a quantity derived from the second quantity, namely, $1/(1 + (2))$. Quantity (3) is termed most convenient. The relationships between the mean numbers of failures to act (misses) in actuation and release and of spurious switching are discussed. In the test for upper (actuation) misses at several levels of irradiation of the sensor near the actuation threshold level, the radioactive relay is set up in its inoperative state. An auxiliary electromagnetic relay, arranged in series with an electromechanical counter, breaks the feed circuit of the sensor briefly following each counting action to return the relay to its inoperative state. In the test of the lower (release) misses, the radioactive relay is set up in its operative state, and the auxiliary relay will apply a voltage to the radioactive relay following each counting action to restore it to its actuation position. The resulting counts

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are plotted versus the counting rate (or the voltage) in a logarithmic graph, and the analytical method of determining the characteristic dependability index from the extrapolated observed-count curves is explained. The test period actually used is 1/10 hr, and the radiation levels employed are such that from 3 to 100 misses per 1/10 hr are observed. A specific numerical example, applying to an ЗРБ-60 (ERB-60) relay with an РД-6 (RD-6) sensor, is reported. The extension of the comprehensive test to mass-production items consists in verifying the probability of misses at two fixed counting rates, without actually performing the extrapolations to infinity. The proposed extrapolation method affords a graphic means for a tentative determination of the statistical dependability of a radioactive relay at both the minimal and the maximal counting rate. Thanks are expressed to I.M. Taksar and V.A. Yanushkovskiy for valuable advice in the performance of the reported work. There are 2 figures and 3 Russian-language Soviet references.

ASSOCIATION: None given.

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S/137/61/000/011/016/123
A060/A101

AUTHORS: Ber, Ya.M., Gunne, Kh.E., Chashinev, A.V., Yanushkovskiy, V.A.

TITLE: Automation of separate aggregates in dressing and agglomeration plants by means of radiometric instruments

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 20, abstract 11V140 (V sb. "Radioakt. izotopy i yadern. izlucheniya v nar. kh-ve SSSR, v. 3", Moscow, Gostoptekhizdat, 1961, 159 - 161)

TEXT: Results of the testing of radiometric instruments for the automation of bunker loading are cited. Two Co^{60} radiation sources are placed upon the inner wall of the bunker. The first one, controlling the upper level, may irradiate two sensors, one of which transmits a signal as to the state of the bunker to the dispatcher, and the second controls the position of the automatic rack. If the bunker is filled up to the upper level, then the source affixed to the bogie cannot irradiate the sensor, as result of which the bogie will not remain above the bunker. Now if the bunker is not filled up, then the irradiation of the cassette will lead to the stopping of the bogie. УРАП-2а (URAP-2a) from the Tallin KIP factory was used as the radiometric device. The radiation source was

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of comparatively low activity (4.5 mg-equiv. of Ra for each level). The sensitivity and response time of the scheme turned out to be entirely satisfactory for the automatic rack velocity of 0.3 m/sec. At the level of the operating platform near the bunker the radiation dosage was 0.025μ R/sec, whereas at the level of the scale cars, under the bunker, there was practically no radiation.

A. Pokhvisnev

[Abstracter's note: Complete translation]

Card 2/2

BERSONS, I.; VEVERIS, O.; GUNNE, Kh. [~~Gunne~~, H.]; KOLMYKOVA, L.;
PELEKIS, L.

Detection of leaks in hermetized objects of small dimensions by
means of radioactive gas. Izv.AN Latv.SSR no.11:73-80 '63.
(MIRA 17:4)

1. Institut fiziki AN LatvSSR.

GUNST, Anatoliy Anatolyevich, DOLENKO, L.N., red.

[Construction of overhead and cable communication lines;
manual] Montazh vozdukhnykh i kabel'nykh lini svyazi;
uchebnoe posobie. Moskva, Mosk. elektrotekhn. in-t svyazi.
Pt.1. 1962. 139 p. (MIRA 18:5)

GUNTA, I., ing.

New technolgy in building contact networks for streetcars
and trolley buses. Rev transport 8 no. 7:310-318 J1 '61.

USSR/Plant Diseases - Diseases of Cultivated Plants.

U.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 16034

Author : R. Guntaishvili

Inst : The Georgian Agricultural Institute.

Title : Several Problems in Controlling Citrus Crop Diseases in
Adzharia.
(Nekotoryye voprosy bor'by s boleznyu tsitrusovykh
kul'tur v Adzharii).

Orig Pub : Nauchn. tr. stud. Gruz. s. kh. in-ta, 1957, 6-7, 77-84.

Abstract : No abstract.

Card 1/1

GUNTAISHVILI, R.K.

Materials on studying the causative agent of corn ear-rot in
Georgia. Soob. AN Gruz. SSR 32 no. 1:149-156 0 '63.
(MIRA 17:9)

KRUCHENITSKIY, M.L., starshiy elektromekhanik; GUNTAREV, V.P., starshiy inzh.;
LOBUR', I.G., starshiy elektromekhanik

Intercommunication system for ticket offices. Avtom. telem. i sviaz'
5 no.11:34-38 N '61. (MIRA 14:11)

1. Upravlencheskaya distantziya signalizatsii i svyazi Yugo-Zapadnoy
dorogi (for Khuchenitskiy). 2. Laboratoriya signalizatsii i svyazi
Dal'nevostochnoy dorogi (for Guntarev). 3. Khabarovskaya distantziya
signalizatsii i svyazi Dal'nevostochnoy dorogi (for Lobur').
(Railroads--Communication systems)

GUNTER, A.P.

Gunter, A.P. "The results of etiological treatment of severe hydrogen-sulfide intoxication", Trudy Kazansk. gos. med. in-ta, 1949, Issue 1, p. 43-64, -Bibliog: 38 items.

SO: U-411, 17 July 53, (Letopis' Zhurnal 'nykh Statey, No. 20, 1949)

A. P. Gunter

The therapy of acute hydrogen sulfide poisoning. A. P. Gunter. *Voprosy Gigeny Truda Stanitsenol Prom. Eston. S.S.R., Eston. Gosudarst. Instut. (Tallin) 1953; 64-8; Referat. Zhur. Khim. Biol. Khim. 1953, No. 2097.*—As a prophylactic NaNO_2 prevented death of rabbits and dogs poisoned with H_2S . NaNO_2 and methylene blue administered during the paralytic stage to animals poisoned with 6 times the lethal dose of $(\text{NH}_4)_2\text{S}$ saved them from death. Administration of pyrogallol to animals poisoned with 3 times the lethal dose of $(\text{NH}_4)_2\text{S}$ prevented their death. B. S. Levine

GUNTER, M. (Republica Democrata Germana)

Determination of the total commodity fund by the interbranch
balance and the role of the consumption balance. Probleme econ
16 no.9:72-85 S '63.

GUNTER, Yu.S., inzh.

Some practical methods of temperature calculations for solid
concrete. Gidr. stroi. 32 no.6:21-24 Je '62. (MIRA 15:6)
(Concrete—Thermal properties)

GUNTHER, E.

Origin and measurement of static electricity in the textile industry. P. 86 MAGYAR TEXTILTECHNIKA. Budapest, No. 3, Mar. 1956

SOURCE: East European Accessions List (EEAL) Library of Congress
Vol. 5, no. 8, August 1956

THOMAS, L.

"Loren's Economic Rent Theory And Its Significance For The Development of Agriculture." (Za Socialistickou Ekonomiku. Vol. 3, No. 12, Dec, 1953, Praha.)

SO: Monthly List of East European Accessions, Vol. 3, No. 3, Library of Congress, March 1954, Uncl.

GUNTHER, J.; ROGOZINSKI, T., mgr [translator] .

Requirements to be met by blast-furnace slags used in the cement industry. Hutnik P 29 no.7/8:281-288 JL-Ag '62.

GUNTHER, K.

The organization of the multi-assortment production in the Poznan Footwear
Factory. p. 66.

(Przegląd Skorzany, Vol. 12, No. 3, Mar. 1957, Krakow, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 8, Aug. 1957. Uncl.

GUNTHER, K. [Gunter, K.]; FREYER, G.

Study of the diffusion movement of water molecules in solutions
of paramagnetic ions by measuring proton resonance. Abstract.
khim. 5 no. 2:193-200 Mr-Apr '64. (MIRA 17:6)

1. Vsesoyuznyy institut universiteta Karla Marksa, Leningrad.

GUNTHER, L., inz.

Degasification of the upper bed of new mine fields and utilization of natural gas in Ostrava coal district. Uhli 3 no.12:400-401 D '61.

1. Zavod pro degazaci a odvodneni, Ostravsko-Karvinsky revir, Oprechtice u Mistku.

(Coal mines and mining) (Gas, Natural)

GUNTHER, Lumir, inz.

Origin and occurrence of natural gases in the southern areas
of the Ostrava-Karvina coalfield. Uhli 5 no.9:307-309 S'63.

1. Zavod pro degazaci a odvodneni, Oprechtice u Mistku.

GUNTHER, M.

C. A.

The zero-field fluctuation energy correction for the ground state of the helium atom. Marian Gunther (Univ. Warsaw, Poland). *Physica* 15, 675 (1948) (in English).--An attempt is made to resolve the discrepancy of 14 cm^{-1} between the most refined theoretical value and the expt. value for the ionization energy of the He atom. An improved value for the zero-field fluctuation correction for the He atom, calcd. by the method of Welton (C. L. 43, 1686a), is 5.8. By use of this value the discrepancy between theory and expt. is 12 cm^{-1} , which is within the uncertainty of the expt. value. Leonard W. Nordlach

GUNTHER, M., SZYMANKIEWICZ, Z.

"Quantum physics. p. 210." (FIZYKA I CHEMIA), Vol. 6, no. 4, July/Aug. 1953, Warszawa,
Poland

So: Monthly List of East European Accessions L. C. Vol. 2, No. 11, Nov. 1953, Uncl.

GUNTHER, M.

Two-quantum interaction correction for the ground-state energy of the helium atom. Marian Gunther (Univ. Warsaw). *Phys. Rev.* 111, 182-7 (1966). A frozen potential for mutual 2-quantum 2-electron interaction derived from nonrelativistic quantum electrodynamics is used to calc. an energy correction for ^4He with Hylleraas-type wave functions. Jack J. Bulloff

3

GUMMER, H.; LEPITRE, H.

Airplane propulsion methods. p. 107

LETECKY OBZOR. (Ministerstvo deprovy) Praha, Czechoslovakia. Vol. 3,
no. 4, Apr. 1959

Monthly List of East European Accessions (EEAI), LC. Vol. 9, no. 2, Feb. 1960
Uncl.

...ing, ...

Gnther, R. A modern method of complete demineralization of water
supplied for high-pressure rollers, p. 13.

CHEMIEK

Vol. 9, No. 1, Jan. 1956 Warszawa, Poland

Source: Monthly List of BEAL, Lc, Vol. 5, No. 10 Oct. 1956

GÜNTHER, W., inz.

New trends in ship welding. Bud okretowe Warszawa 8 no.10:344-
347 0 '63.

1. Instytut Budowy Okretow, Rostock.

(GUNTIS, A) (1)

PA - 2056

AUTHOR: GUNC, A.G.
 TITLE: A Method for the Synthesis of a (1,k) Pole.
 PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 112, Nr 1, pp 55-57
 (U.S.S.R.)

Received: 2 / 1957

Reviewed: 3 / 1957

ABSTRACT: If a many-pole A is regarded as a (1,n-1) pole with the input M_1 and the outputs M_2, M_3, \dots, M_n , that transformation which does not change the total conductivities $\sum_{\alpha\beta} (A)$ ($\beta = 2, 3, \dots, n$) between the input M_1 and any output is called equivalent transformation of such a (1,n-1) pole. The present work proves that any such transformation can be realized also by an algebraic transformation of the characteristic function

$$f_A(x_1, x_2, \dots, x_n) = \sum_{\alpha, \beta=1}^n a_{\alpha\beta} x_{\alpha} \bar{x}_{\beta},$$

though only if an additional system of inequations is taken into account. Here $a_{\alpha\beta}$ denotes the immediate conductivity between the pole M_{α} and the pole M_{β} . A class K of equivalent (1,n-1)-poles is here investigated, i.e. the amount of those n-poles A the total conductivities of which are equal to the given quantities $\sum_{\alpha\beta}$:

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A Method for the Synthesis of a (1,k) Pole.

$\chi_{1\beta}(A) = \chi_{1\beta}$ ($\beta = 2, 3, \dots, n$). The following theorem is then established: The characteristic functions of all many-poles from K lie in the interval $[u, v]$ and this interval does not contain any other characteristic functions. In this connection it applies that:

$$\sum_{\beta=1}^n \chi_{1\beta} x_1 x_\beta = u \quad \text{and} \quad \sum_{\beta=1}^n \chi_{1\beta} \bar{x}_\beta + \chi_{1\beta} x_\beta = v.$$

The proof of this theorem is indicated step by step. The following theorem is then shown: In order that two (1,n-1) poles A and B are equivalent, which means in order that

$\chi_{1\beta}(A) = \chi_{1\beta}(B)$ with ($\beta=1, 2, \dots, n$) applies, it is necessary and sufficient that in the case of all values of x_1, x_2, \dots, x_n , which satisfy the condition

$x_1 = 1, x_\beta \leq \chi_{1\beta}(A)$ ($\beta = 1, 2, \dots, n$) the characteristic functions of these (1,n-1) poles are equal: $f_A(x_1, x_2, \dots, x_n) = f_B(x_1, x_2, \dots, x_n)$. The proof of this theorem is indicated step by step with respect to necessity and sufficiency.

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A Method for the Synthesis of a (1,k) Pole.

The above theorem provides a method for the synthesis of a (1,n-1) pole with given conductivities $\chi_{12}, \chi_{13}, \dots, \chi_{1n}$. In the case of an exclusive application of this process and of an identical transformation any (1,n-1) pole can be received that satisfies the conditions of the problem.

Finally the following two examples are discussed in short:

- 1) Construct a (1,2) pole with the conductivities
 $\chi_{12} = a + bkd + cg + chd, \chi_{13} = bk + ad + aek + ch + cgd + ogek.$
- 2) Construct a (1,2) pole A without valve elements with the conductivities $\chi_{12} = c + ed + adg + ab + beg$ and
 $\chi_{13} = b + dg + aed + ac + ceg.$

ASSOCIATION: Leningrad Electrotechnical Institute: V.I. UL'JANOV (LENIN)"

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress.

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GAKHOKIDZE, A.M.; GUNTSADZE, A.G.

Magnesium organic synthesis of saccharinic acid from d-xylose. Soob.
AN Gruz.SSR 9 no.2:115-119 '48. (MIRA 9:7)

1.Akademiya nauk Gruzinskoy SSR, Khimicheskiy institut, Tbilisi.
Predstavleno deystvitel'nym chlenom Akademii I.G.Kutateladze.
(Xylose) (Saccharinic acids)

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CONDENSATION OF KETONES WITH ESTERS OF THE ORGANIC ACIDS. I. CONDENSATION OF ACETONE WITH THE ESTERS OF FORMIC, ACETIC, PROPIONIC, AND BUTYRIC ACIDS. A. M. GAKHOKIDZE. II. CONDENSATION OF ACETONE WITH MALONIC ACID ESTERS. A. M. GAKHOKIDZE AND A. P. GUNTSAIDZE. (In Russian.) Zhurnal Obshchei Khimii (Journal of General Chemistry), v. 17(79), July 1947, p. 1327-1331; Sept. 1947, p. 1640-1642.
20 references.

GVERDTSITELI, I.M.; GUNTSADZE, T.P.; PETROV, A.D.

Synthesis and dehydration of some germanium-containing
diene carbinols. Dokl. AN SSSR 153 no.1:107-110 N '63.
(MIRA 17:1)

1. Tbilisskiy gosudarstvennyy universitet. 2. Chlen-
korrespondent AN SSSR (for Petrov).

G.E. VITANI, I.M.; GUTMAN, T.I.; AND G. A...

Some transformations of germane-containing diene carbinols.
Soob. Akad. Nauk SSSR 36 no.3:579-584 D 164.

(MIRA 18:3)

1. Tbilisskiy gosudarstvennyy universitet. 2. Chlen-korrespondent
AN SSSR. Submitted July 23, 1964.

GVERDTSITELI, I. M.; GUNTSADEE, T. P.; PETROV, A. D.

Effect of HGe (C_2H_5)₃ on primary and secondary vinylstyrene
carbinols. Dokl. AN SSSR 157 no. 3 no. 7-610 J1 '64.

(MIRA 17:7)

1. Tbilisskiy gosudarstvennyy universitet, 2. Chlen-korrespondent
AN SSSR (for Petrov).

GUNULCZYNSKI, Jozef; GIERIASZYNSKA, Stanislaw

Remarks on the article "The Influence of Oil-Well Drilling-
Fluid Parameters on Drilling Indexes." Wlad naft 6 no.1:6-7 '60.
(EEAI 9:6)

(Oil well drilling)

YEROLIC, P.M., SMITH, L.P.

Fishing--Implements and Appliances

Introducing stationary trap nets in the Kuban. Ryb. khoz. 28, no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____ 1952
1953. Unclassified.

GUNYAVYY, V.D.

More pork with less expenditure of feed. Veterinariia 41 no.9:
11 S '64. (MIRA 18:4)

1. Starshiy veterinarnyy vrach kolkhoza imeni 1 Maya, Faleshtskogo
rayona, Moldavskoy SSR.

L 55219-65 EPA(s)-2/ENT(m)/EPF(c)/EMP(v)/EMP(j)/T WW/RM

ACCESSION NR: AP5022229

UR/0101/65/000/009/0060/0063
678.632+678.643+42'5+678.664:678.046.36

AUTHOR: Trostyanskaya, Ye. B.; Gunyayev, G. M.

TITLE: Glass-reinforced plastics with glass-film filler

SOURCE: Plasticheskiye massy, no. 9, 1965, 60-63

TOPIC TAGS: reinforced plastic, glass film, epoxy plastic

ABSTRACT: The processability and mechanical properties of glass-film reinforced plastics have been studied in view of the absence of data on such plastics. It is noted that the use of glass-film reinforcement is a promising way of increasing the rigidity and imparting transparency and gas-tightness to glass-reinforced plastics. Films of various types of glass were glued together with VK-1 epoxy adhesive modified with BF-4 phenol-formaldehyde or VK-5 polyurethane adhesive. After elimination of the solvent from the "prepreg," the lay-up was carried out in molds. Molding pressure did not exceed 10 kg/cm². The original article gives data on the mechanical properties of the end products in tabular form and compares them with such data for conventional glass-fabric reinforced plastics. The glass-film reinforced plastics

Card 1/2

L 65219-65

ACCESSION NR: AP5022229

were somewhat denser, and substantially more rigid and stronger. Their modulus of elasticity in bending and compressive strength exceeded those of the glass-fabric reinforced plastics by a factor of 2-4. A feature of the new materials is the isotropy of their mechanical properties in the plane of the sheet. The low resin content in the new materials contributes to their improved dielectric properties and heat resistance. The effect of glass type on the mechanical properties is also discussed. Orig. art. has: 7 figures and 4 tables. (SM)

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MT

NO REF SOV: 005

OTHER: 004

ATD PRESS: 4089

Card 2/2

PROPERTY OF THE U.S. GOVERNMENT

Glass reinforced plastic with glass fibers on 10-2. 10-2
masonry. 9-160-63 165.

SOV/137-57-1-452

Translation from: Referativnyy zhurnal. Metallurgiya, 1957, Nr 1, p 60 (USSR)

AUTHORS: Kuz'min, L. L., Gunyayeva, M. M.

TITLE: Cathode Reduction of Mercuric Oxide (Katodnoye vosstanovleniye okisi rtuti)

PERIODICAL: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1956, Nr 5, pp 34-36

ABSTRACT: The author investigated the reduction of HgO in electrolysis during direct contact between Hg particles and the cathode in relation to the current density D and the cathode material used. A 500-cc battery container was used as the electrolyzer. The horizontal cathode was located on the bottom of the bath. An Ni anode was placed 17 mm above it. A 3% NaOH solution served as the electrolyte. The upper surface of the cathode was coated with a uniform layer of HgO . Cu , Ni , and Fe plates were used as the cathodes. The electrolysis was carried out with $I = 0.25$ amp for 4 hours, the ratio of the cathode surface to the anode surface being $\leq 1:10$. The reduction of HgO with low D densities proceeds very rapidly. Graphs of the results of the experiments are submitted.

Card 1/1

G. A.

AUTHOR : F. R.
 SUBJECT : Forestry, Forest Biology, Silviculture.
 RES. JOUR. : Lesov. zhurn., 1959, No. 6, 6175.
 ORIGIN : Minsk, B.S.S.R.
 TITLE : The Effect of Fertilizer on the Growth of Pine Saplings.
 ORIG. PU. : Vsesoyuzn. nauch.-issled. inst. lesn. khoz. i sel'sk. khoz. mach. im. S. M. Kirova, Minsk, 1959, No. 10, 110-117.
 SUMMARY : This research was conducted in a pine-beech wood during 1951-1954 at Agricultural Experimental Training Research Institute which were damaged by fire in 1944. Various studies testify to the sharp deterioration of the quality of the wood stands, and the necessity of their restoration. At certain points was not found a result of an increase in their average height through improvement culture. The weather activity

1000

175

of the pieces which survived the fire is shown by weight analysis of average model trees: the overall weight, weight of the trunk, needles, brownwood and roots. With reduced weight in the remaining parts of the tree, the weight of the trunks (absolute and in relation to trunk weight) increased in the larger stands, giving evidence of poorer liberation of the trunks. Significant reduction of root system growth was noted after

100:

APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R000617410002-0"

ABE. JOUR. : RZ1101., No. 2, 1959, No. 6135

AUTHOR :
 DATE :
 TITLE :

ORIG. PUB. :

ABSTRACT : the fire. A worsening of soil conditions resulting from the burning of litter and a considerable reduction of the humus and total N contents in horizon A₁ (the findings of the analyses are presented), together with root system injuries, are the principal cause of debilitated vitality in the tree stands. With an increase in the intensity of the fire the lighting and water balance conditions become more favorable for pine

102

3/4

GUNYAZHENKO, I. V. Cand Agr Sci -- (diss) "Effect of lowland fires upon
the productivity of ^{pine saplings} ~~zhordnyaki~~ ^{young pine trees} and ^{measures for taking}
^{care of} them (According to studies in the Negorelovo experimental-training ^{liv. lab.}
^{forestry})." Minsk, 1958. 19 pp (Min of Higher Education USSR. Belorussian
Forestry Engineering Inst im S. M. Kirov), 150 copies (KL, 52-58, 104)

GUNYAZHENKO, I.V.

Practices in the improvement of the production of pole-size
pine trees damaged by ground fires. Sbor. nauch. trud.
BLTI no.11:64-76 '58. (MIRA 15:12)
(White Russia--Pine)
(White Russia--Forest flies)

GUNYAZHENKO, I.V.

Changes in the ground cover of pine forests under the influence
of ground fire. Sbor. bot. rab. Bel. otd. VBO no.2:50-57 '60.
(MIRA 15:1)

(Pine)

(Forest fires)

GUNYA HONKO, I.V.

Effect of some climatic factors on the accretion of common
pine. Bot.; issi. Bel. itd. VBO no.5:173-176 '63.
(MIRA 17:5)

NOVIKOV, A.L.; GUNYAZHENKO, I.V.

Vitamin content in conifer needles of some local and introduced species.
Bot.; issl. Bel. otd. VBO no.6s208-213 '64. (MIRA 18:7)

AID P - 4017

Subject : USSR/Power

Card 1/1 Pub. 26 - 6/31

Authors : Gunzburg, D. B., Dr. Tech. Sci., M. A. Matveyev, Kand.
Tech. Sci.

Title : On packed lining for boiler surfaces.

Periodical : Elek. sta., 11, 20-23, N 1955

Abstract : Authors report on research made on properties of lining used to improve imperviousness of waterwalls. A detailed description of tests made with different types of lining is given. Liquid glass, cement and magnesium solutions were used and proved to be satisfactory. The method of preparing these linings is described. Six diagrams.

Institution : None

Submitted : No date

MEL'NIK, Ye.G.; GUNZBURG, Ye.A.; BURKOVA, M.A.

Bacteriological and serological diagnosis of salmonellosis from data
of the laboratory of the Moscow Municipal Clinical Hospital No.1.

Zhur.mikrobiol.epid.i immun. 31 no.1:143-147 Ja '60.

(MIRA 13:5)

1. Iz Moskovskoy gorodskoy klinicheskoy bol'nitsy No.1.

(SALMONELLA INFECTIONS diagnosis)

GUNZEL, E., inż. dypl.

Economic, scientific, and technical cooperation of Poland and
the German Democratic Republic in shipbuilding. Bud okretow
Warszawa 8 no.10:332-334 0 '63.

1. Kierownik sekcji współpracy międzynarodowej Instytutu Budowy
Okretow, Rostock.

Article 1, and ...

"Gene Investigations and the 1st of the Theory of ..."
(GLASNIK ISTRAZIVAC-POSREDOVANJE, Vol. 3, no. 2, 1965, Zagreb,
Yugoslavia)

NO: Monthly List of East European Accessions, IC, Vol. 3, no. 1, Jan 1966/Incl.

USSR/Human and Animal Physiology. The Nervous System.

T

Abs Jour:Ref Zhur-Biol., No 8, 1958, 36913.

Author : Guobis, *G.*

Inst :

Title : The Problem of Disturbances of the Activity of the
Cerebral Cortex and Some Vegetative Functions in
Experimental Staphylococccic Infections.

Orig Pub: Svoikatos apsauga, 1957, No 3, 29-34.

Abstract: No abstract.

Card : 1/1

USSR/Human and Animal Physiology (Normal and Pathological)
Nervous System. Higher Nervous Activity. Behavior.

T

Abs Jour : Ref Zhur Biol., No 6, 1959, 27053

Author : Guobis, G.Ya.

Inst : Academy of Sciences, Lithuanian SSR

Title : On Disturbances of Higher Nervous Activity and Some
Vegetative Functions in Experimental Staphylococcal
Intoxication in Dogs.

Orig Pub : Tr. AN LitSSR, 1957, B, No 4, 193-207

Abstract : In the first hours and 2-12 days after subcutaneous
introduction to dogs of staphylococcal toxin (0.5 ml/
kg), an increase of latent period and considerable
weakening or extinction of conditioned reflexes (CR) was
noted. During the second period (13-34 days) extinction
of separate CR, weakening of internal inhibition, and

Card 1/2

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Card 2/2

GUOBIS, G. Ya.

"The Influence Exercised by Staphylococcus Intoxication Upon the Dynamics of the Cortex and Some Vegetative Functions With Dogs."

dissertation defended for the degree of Candidate of Medical Sciences at the Inst. for Higher Nervous Activity.

Defense of Dissertation (Jan-Jul 1957)
Sect. of Biological Sciences
Vest. AN SSSR, 1957, v. 27, No. 12, pp. 115-117

(KL, 17-57, 99)

KRYACHKO, L.I.; GUOBIS, G.Ya.

Relation of cellular immunological reactions and the general course of staphylococcal intoxication to typological characteristics of the nervous system in dogs. Zhur.mikrobiol.enid. i immun. 29 no.3:23-30 Mr '58. (MIRA 11:4)

1. Iz Instituta vysshey nervnoy deyatel'nosti AN SSSR.
(MICROCOCCAL INFECTIONS, experimental,
relation of type of NS to immunol. reactions & course in
dogs (Rus)
(NERVOUS SYSTEM, physiology,
eff. of type of NS to immunol. reactions & course of
exper. micrococcal infect. in dogs (Rus)

GUOBIS, G.Ya.

Influence of staphylococcal infection on the activity of the
higher sections of the central nervous system in dogs. Trudy
Inst.vys.nerv.delat.Ser.patofiziol. 6:38-64 '59.

(MIRA 12:10)

(REFLEXES) (STAPHYLOCOCCAL INFECTIONS)

GUONIS, G.Ya.

Changes in the respiratory component of the conditioned food
reflexes and of the cardiac activity in experimental staphy-
lococcal infections in dogs. Trudy Inst.vys.nerv.deiat.Ser.
patofiziol. 6:65-76 '59. (MIRA 12:10)
(CONDITIONED RESPONSE) (STAPHYLOCOCCAL INFECTIONS)
(RESPIRATION) (HEART)

GUCBIS, G.Ya. [Gucbis, G., kand. med. nauk; X KAN KUN] 1955.
[Knyazevskaya, T.Ya.], kand. med. nauk; SLOVANSKI, Ye.Ye.
[Sasnovskaya, E.], kand. med. nauk

Scientific conference dedicated to the 125th anniversary of the
Druskininkai Health Resort. Voy. kur. fizioter. i teh. fiz. kul't.
28 no.3:201-25 Vy. 1963. (CORA 17:5)

L 02231-67 EWI(1)/EWI(m)/EWP(t)/ETI LIP(c) JD/AT

ACC NR: AR6013670

SOURCE CODE: UR/0058/65/000/010/E067/E067

AUTHOR: Matulenis, A. Yu.; Guoga, V. I.

TITLE: Role of the tunnel transition in the relaxation of the electrostatic potential of zinc oxide

SOURCE: Ref. zh. Fizika, Abs. 10E539

REF. SOURCE: Sb. Probov dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 330-333

TOPIC TAGS: zinc oxide, tunnel effect, electrophotography, relaxation process, electron recombination

ABSTRACT: The authors investigated the relaxation of the electrostatic potential of electrophotographic layers ZnO on an aluminum substrate at different temperatures. At the start of the charging process, tunnelling of the electrons takes place from the surface into the volume. The succeeding exponential part of the relaxation is apparently connected with recombination of the thermally generated holes on the surface of the ZnO. G. Stepanov. [Translation of abstract].

SUB CODE: 20

Card 1/1 *LC*

DAN,S.; ANTAL,L.; SZEGEDI, Gy.; GUORFFY,A.

Studies on adaptive enzyme synthesis. Acta med. acad. sci.
Hung. 14 no.4:295-309 '63.

1. First Department of Medicine (director: prof. B.Fornet)
and Second Department of Medicine (director: prof. Gy.Petranyi),
University Medical School, Debrecen.

*

GUTH, E.

GUTH, E. Measuring the datum line with an invar tape in the reconstruction of the Komarom railroad bridge. p. 253.

Vol. 7, No. 4, 1955.
GEODEZIA ES KARTOGRAFIA
SCIENCE
Budapest, Hungary

So: East European Accession, Vol. 5, No. 5, May 1956

GUOTH, B.

TECHNOLOGY

KOZLEKEZTUDOMÁNYI SZEMLE. (Közlekedés- és Közlekedésszerződésmányi
Egyesület) Budapest.

GUOTH, B. Past, present, and future of the national and free port of
Budapest-Csepel. p. 297.

Vol. 8, no. 7/8, July/Aug. 1958

Monthly list of East European Accession (EEAI) LC Vol. 8, No 3.
March 1958, Unclass.

GUOTH, Bela, dr., aranydiplomas mérnökdoctor, nyugalmazott tervező mérnök

Placement of pipelines and cables in river beds. Vizugyi kozl no.2:
303-312 '62.

1. Civil Engineering Designing Enterprise, Budapest.

HUNGARY/Diseases of Farm Animals - Diseases Caused by
Bacteria and Fungi.

R-2

Abs Jour : Ref Zhur - Biol., No 11, 1958, 50148

Author : Guoth, Endre

Inst : -

Title : Investigating Cows with Positive Tuberculin Reactions,
and Examining Their Colostrum with Aim of Detecting
Tuberculosis Infection in Suckling Calves.

Orig Pub : Magyar allatorv. lapja, 1957, 12, No 1-2, 41-43

Abstract : When it was established that tuberculosis infected calves
originated from cows with positive tuberculin reactions
but otherwise clinically healthy, the author set himself
the goal of determining the mechanism of infection and of
working out a variety of methods which would permit to
avoid the danger of infection. When the colostrum speci-
mens of 64 such cows were microscopically examined, no tu-
bercule bacteria were found. Attempts to obtain bacterial

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HUNGARY/Diseases of Farm Animals - Diseases Caused by
Bacteria and Fungi.

R-2

Abs Jour : Ref Zhur - Biol., No 11, 1958, 50143

cultures from the colostrum of 18 of the cows, as well as from 8 other experimentally infected animals also proved negative. These tests testified to the fact that infection of calves by alimentary means is impossible. During a period of 3 years, it was found that only 2 out of 200 cows infected 14 calves, which have been kept with them during the first days of their life. The infection occurred aerogenically. Pulmonary tuberculosis was clinically diagnosed in the original 2 cows 1-1 $\frac{1}{2}$ months later. --
V.A. Kanzyuba.

Card 2/2

- 3 -

KUBANYI, Endre, dr.; GUOTH, Janos, dr.

Therapy of relapsing abdominal wall hernia by implantation of tantalum mesh, and histological studies in experimental animals.
Orv. hetil. 97 no.33:904-906 12 Aug 56.

1. A Pestmegyei Tanacs Korhaza II. sz. Sebészeti Osztalyanak
(foorvos: Kubanyi, Endre, dr.) es az Allatorvosi Foiskala Szovettani
Intezetenek (vezeto: Guoth, Janos, dr. docens) kozlemenye.

(HERNIA, surg.

tantalum mesh implantation in relapsing hernia (Hun))

(TANTALUM

mesh implantation in surg. of relapsing hernia (Hun))

KUBANYI, Endre; GUOTH, Janos

Management of recurrent hernia of the abdominal wall by tantalum mesh implantation and histological examinations in animal experiments. *Magy. Tudom. Akad. Biol. Orv. Oszt. Kozl.* 8 no.1-2: 102-103 1957.

1. A Pest megyei Tanács Kórhaza II. sz. Sebészeti Osztálya és az Állatorvosi Főiskola Szövetéltani Intézete.

(HERNIA, surg.

tantalum mesh implantation in recur. abdom. wall hernia
(Hun))

HUNGARY / Human and Animal Physiology. Internal
Secretion, Parathyroid Gland.

T

Abs Jour: Ref Zhur-Biol., No 22, 1958, 102025.

Author : Guoth, Janos; Scheiber, Livot; Csiky, Ildiko;
Damjanovich, Ida; Varga, Istvan.

Inst : Not given.

Title : Experiments with Strongly Cooled Transplants of
Parathyroid Gland. Histologic Study of Trans-
plants.

Orig Pub: Magyar allatorv. lapja, 1957, 12, No 7-9, 246-250.

Abstract: By heterotransplantation of cooled parathyroid
gland (CPG), it is possible to prevent temporarily
the changes in the organism of rabbit induced by
the removal of CPG. The transplant (T) of CPG de-
generates in the end, starting from the central
part. After 4 weeks the peripheral cells of T
still preserve the structure characteristic for

Card 1/2

GUOTH, J.

Polundnica and krakova hola. p. 392

KRASY SLOVENSKA (Poverenictvo Dopravy. Riaditelstvo pre cestovny ruch)
Bratislava Czechoslovakia

Vol. 36, no. 10, Oct. 1959

Monthly list of East European Accessions (EEAI) LC. Vol. 9, no. 1 Jan. 1960

Uncl.

GUOTH, S.

The discovery and age dynamics of Dictyocaulus (Micruracaulus) eckerti Skrjabin, 1931, a pneumohelminth of deer in the High Tatra National Park. p. 675.

Bratislava, Czechoslovakia. Vol. 12, no. 9, 1958

Monthly List of East European Accessions (EEAI), LC. Vol. 9, no. 2.
Feb., 1960. Uncl.

GUOTH, S.

Discovery of the nematode *Rinadia caucasica* Asadov, 1955, in deer (*Cervus elaphys* L.) in the Tatra National Park, p. 764

BIOLOGIA. (Slovenska akademia vied) Bratislava, Czechoslovakia, Vol. 13, no. 10, 1958

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959
Uncl.

GUOTH, Svetozar

Helminthofauna of the Alpine ibex (*Capra ibex* L.) and the bezoar goat (*Capra aegargus* Gm.) from the Tatra National Park. *Biologia* 15 no.6:421-426 '60. (EEAI 9:10)

1. Helmintologicky ustav Slovenskej akademie vied, Kosice.
(SLOVAKIA--WORMS) (BOUQUETIN)
(GOATS) (CAPRA)

HUNGARY

KOVACS, Gyula, Dr, professor, president, GUOUTH, Gy., Endre, Dr, professor emeritus of surgery; [affiliations not given].

"The Program of the Meeting in Memory of PLOSZ, Bela, Dr, Professor of Surgery (1863-1945)."

Budapest, Magyar Allatorvosok Lapja, Vol 18, No 10, Oct 63, pages 389-395.

Abstract: The meeting at the centennial of the birth of PLOSZ was opened by KOVACS, Gyula. GUOUTH, Gy., Endre, delivered the commemorative lecture. The life of PLOSZ, his scientific activities and publications were discussed. No references.

GUPALENKO, A.M.; TARAN, G.K.; STETSENKO, V.M.

Hystriehosis of domestic ducks in inlets of the lower Dniester.
Veterinariia 35 no.4:45-48 Ap '58. (MIRA 11:3)

1. Nachal'nik otdela veterinarii Odesskogo oblupravleniya sel'-
skogo khozyaystva (for Gupalenko). 2. Direktor oblastnoy vet-
baklaboratorii (for Stetsenko). 3. Zaveduyushchiy parazitologi-
cheskim otdelom oblvethaklaboratorii (for Taran).
(Dniester Valley--Ducks--Diseases and pests)

SECRET

SUBJ: The last condition of the...
...of...
...of...
...of...
...of...

Re: 1951-1952 No 12, 1951. Moscow

1965, 1.1.

Case of dissecting aortic aneurysm with rupture of a descending
ulcer of the esophageal wall. Vest. rent. i rad. 1961-62
My-Je 1965. (MIA 1967)

- I. Kafedra rentgenologii i radiologii (prof. I.A. Myschenko)
- II Moskovskogo meditsinskogo Instituta (prof. I. I. Ilyukova).

ABRAMOV, G.A.; VETVUKOV, M.M.; GUPALO, I.P.; KOSTYUKOV, A.A.; LOZHKIN, L.N.

[Theoretical principles of aluminum electrometallurgy] Teoreticheskie osnovy elektrometallurgii aliuminija. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1953. 583 p. (MLRA 6:12)
(Aluminum--Electrometallurgy)

Gupalo, I.I.

AGEYEV, P.Ya.; ALABYSHEV, A.F.; BAYMAKOV, Yu.V.; BELYAYEV, A.I.; BATASHEV, K.P.;
BUGAREV, L.A.; VASIL'YEV, Z.V.; GUPALO, I.P.; GUS'KOV, V.M.; ZHURIN, A.I.;
VETUYKOV, M.M.; KOSTYUKOV, A.A.; LOZHKIN, L.N.; OL'KHOV, N.P.;
OSIPOVA, T.V.; PERTSEV, I.I.; RUMYANTSEV, M.V.; STRELETS, Ye.L.;
FIRSANOVA, L.A.; CHUPRAKOV, V.Ya.

Georgii Alekseevich Abramov. TSvet.net. 27 no.2:72-73 Mr-Ap '54. (MLRA 10:10)
(Abramov, Georgii Alekseevich, 1906-1953)

SOV/137-58-12-24282

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 51 (USSR)

AUTHORS: Boldin, V. V., Gus'kov, V. M., Gupalo, I. P., Kil', I. G., Nikiforov, V. P.

TITLE: Development and Improvement of Electrolytic Aluminum Production in USSR Plants (Razvitiye i usovershenstvovaniye elektroliticheskogo polucheniya alyuminiya na zavodakh SSSR)

PERIODICAL: V sb.: Legkiye metally. Nr 4. Leningrad, 1957, pp 56-61

ABSTRACT: Design and experimentation toward development of a powerful 120-130,000 amp cell with top delivery of current is coming to a conclusion. In these baths the gas take-off is right over the crust of the electrolyte. This arrangement sharply reduces the amount of gas loss and increases the concentration of fluorine compounds in the gases. This makes regeneration of fluorine salts from them a real possibility. 1952-55 saw a jump in electrolysis engineering, and the major aluminum plants began to increase anode cd to 0.9-1.0 amps/cm² with simultaneous acidification of the baths to cryolite ratios (NaF:AlF₃) of 2.3-2.5, and reduction in the number of anode effects to 0.2-0.5 per bath per day. The Al level in the bath is held

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Development and Improvement of Electrolytic Aluminum Production in USSR Plants

SOV/137-58-12-24282

at about 20 cm and the bath level at 20-25 cm. Cells now in operation are to gain 20% in output in the immediate future by increase in current intensity. This will require reduction in the distance between electrodes, introduction of special additives into the cells to increase electroconductivity or current efficiency, increase of anode width up to 300 mm, increase in anode-rod size and change in shape thereof, and increase in the cross section of cathode rods.

I. G.

Card 2/2

SOV/137-58-7-14531

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 84 (USSR)

AUTHORS: Gupalo, I.P., Svoboda, R.V., Karnaukh, S.A.

TITLE: On the Nature of Non-quenching Flashes (K voprosu o prirode negasnushchikh vspyshek)

PERIODICAL: Tr. Vses. alyumin.-magn. in-ta, 1957, Nr 39, pp 313-317

ABSTRACT: The periodic appearance in Al cells of the anode effect or, as it is termed, non-quenching flashes, which are difficult to suppress, is due to the sharp reduction in the area of the Al cathode after metal has been drawn off or to sudden, excessive cooling of the bath. The presence of thick layers of precipitate on the bottom and of crust makes for the appearance of eddy motions of the Al in the bath, since under these conditions the contact surface between Al and bottom is reduced, with the result that horizontal current components appear in the bath, which distort the steady magnetic field of the bath. This brings the Al into motion and with it the electrolyte which is a conductor and is also affected by the magnetic fields in the bath. All this stirs up the alumina precipitates and results in partial suspension of the alumina. It may also be hypothesized that

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SOV/137-58-7-14531

On the Nature of Non-quenching Flashes

the muddied undissolved alumina is attracted to the anode and covers its surface in part, thus stabilizing the flash. One of the methods of eliminating non-quenching flashes is to charge sifted carbon foam into the bath. The particles of carbon adsorb the suspended alumina by electrostatic force.

I.G.

1. Aluminum--Electrolysis
2. Anodes (Electrolytic cell)--Performance
3. Electrolytic cells--Electrical factors

Card 2/2

137-58-6-11903

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 102 (USSR)

AUTHORS: Gupalo, I.P., Svoboda, R.V.

TITLE: Measuring the Temperature of Aluminum Bath Electrolytes (Ob izmerenii temperatury elektrolitov alyuminiyevykh vann)

PERIODICAL: Tr. Vses. alyumin.-magn. in-ta, 1957, Nr 39, pp 318-322

ABSTRACT: Temperature control of Al electrolysis is performed with optical pyrometers of the types OPPIR-45 and OPPIR-09, class 1/1.5, with which the margin of error in electrolyte measurement is $\pm 10-15^{\circ}\text{C}$. This inadequate accuracy of measurement is aggravated by the influence of the strong magnetic fields in the cells upon the pyrometer readings. Since each 10° rise in electrolyte temperature reduces current efficiency by 2-4%, the electrolyte temperature measurement must be rendered precise if effective control is to be accomplished. The measurement of electrolyte temperature in Al cells by Pt/Pt-Rh thermocouples in a triple jacket of porcelain, steel, and graphite and a portable PP-1 potentiometer yields an accuracy of $\pm 2-2.5^{\circ}$, and the magnetic fields of the electrolytic plant do not affect the potentiometer readings. It is

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137-58-6-11903

Measuring the Temperature of Aluminum Bath Electrolytes

established that the temperature of the electrolyte in Al cells is 950-970° when they are functioning normally. Along a line normal to the longitudinal axis of the bath, the melt temperature remains constant regardless of the distance to the anode. The temperature at the ends of the bath sometimes differs by 5-7°. The temperature of the Al is usually 5-7° lower than that of the electrolyte, and the temperature of the precipitate below the Al is an additional 5-7° lower than that of the Al.

- I.G.
- | | | |
|------------------------------|---------------------------------|--------------|
| 1. Electrolytes--Temperature | 2. Temperature--Measurement | 3. Radiation |
| pyrometers--Effectiveness | 4. Thermocouples--Effectiveness | |

Card 2/2

137-58-6-11905

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 103 (USSR)

AUTHOR: Cupalo, I.P.

TITLE: A Method and Equipment for Determining Shifting of Aluminum in the Bath and Fluctuations in Its Level (Metod i ustanovka dlya opredeleniya perekosa i kolebaniya urovnya alyuminiya v vannakh)

PERIODICAL: Tr. Vses. alyumin.-magn. in-ta, 1957, Nr 39, pp 323-325

ABSTRACT: An instrument permitting determination of changes in the Al level in the bath and the magnitude of fluctuations thereof when the line current is changed has been developed and tested. This was accomplished by employing the phenomenon of the potential jump between two leads immersed in the metal of the Al bath at the moment when one of them becomes detached from the Al. The fixed Nr-1 electrode, made of ordinary scrap Fe, is placed directly in the Al of the bath being measured. A movable vertical Nr-2 electrode is fastened to the horizontal portion of the movable electrode by means of a clamp. A galvanometer with a one-volt scale is connected between electrodes Nr 1 and Nr 2. The raising and lowering of the moving

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A Method and Equipment (cont.)

electrode is done by means of a screw in the holder. A gage glass and a graduated rule are fastened to a fixed strip at the top. The gage glass is connected by a rubber hose to a water-filled vessel. The support rests on an insulated base in a position held strictly vertical by means of a level fastened by a screw to the top strip of the support each time a measurement is taken. In order to determine the height of fluctuation of the Al in the bath, the portable electrode is immersed into the Al bath until the galvanometer shows cessation of opening and closing of the circuit by the heaving Al. Then, after recording the position of the moving electrode on the scale, it is moved upward to a point at which closing and opening of the circuit again ceases. The difference between the upper and lower positions of the moving electrode will represent the height of fluctuation of the Al. The depth of the Al in the bath and the magnitude of shift may be determined with this instrument to an accuracy of 1 mm.

I.G.

1. Aluminum--Electrolysis 2. Electrolytic cells--Performance 3. Electrodes
--Applications 4. Galvanometers--Applications

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SOV/38-50-11-10/21

AUTHORS: ~~Cupolo, I.P.,~~
~~Kostyakov, A.A.~~

TITLE: Intensification of Working Aluminium Electrolyzers
(Intensifikatsiya deystvuyushchikh aluminiiyevykh elektrolizerov)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 11, pp 52-60 (USSR)

ABSTRACT: In the last five years considerable increases in productivity have been obtained mainly by current density increases at some Soviet aluminium works (20% at the Kanukerskiy, 28% on the fourth series at the Stalinskiy, 14-23% at the Dneprovskiy and 22% on the first series at the Kandalakshskiy). The authors examine possibilities and ways of further increasing the productivity of working electrolyzers. They analyse the electrical and thermal factors of electrolyzer operation, tabulating (table 1) values for some of the leading works and the distribution of the current increases between heat losses, current efficiency and heating voltage (table 2). Discussing specific electricity consumption with respect to

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Intensification of Working Aluminium Electrolyzers

various factors (especially heat losses) the authors tabulate changes from 1953 values which occurred on some Soviet electrolyzers in 1956 (table 3). As a quick measure for increasing the productivity of working electrolyzers relatively little can be expected from improved current efficiency (already at 86-88%) and the most promising development would be to increase current strengths. The authors show that whether G.A.Abramov's equation (ref.2) for the relation between current efficiency and current density and inter-electrode distance is true or not, optimal conditions are obtained with small inter-electrode distance (fig.). This has been done out by practice but the conditions of such improvements are different at different electrolyzers. Increasing heat losses together with decreasing inter-electrode distances are proposed as a possible significant combination for working electrolyzers and the authors consider the possibility of reducing heating voltages by decreasing the number and duration of anodic effects. Electrolyte composition is another important

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factor and the authors recommend a search for additives to give a low-melting electrolyte with a high electrical conductivity: they mention HCl and LiF (LiAlF_4) as being attractive. Dealing with electrolyzer design the authors disagree with the view that a reduction in the distance between the anode to the edge of the bath (such as accompanies anode widening) must lead to lower current efficiency: they cite Soviet and foreign practice and give the results of their own calculations showing the benefits of anode widening. The high proportions of total resistance which is produced within the anode and the cathode arrangements have been indicated by A.A.Berlennikov and L.V.Lysenko respectively (VAMI) and the authors discuss possible ways of reducing these resistances. They point out that present deficiencies in instrumentation make it difficult to operate electrolyzers as desired and suggest that increases in

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productivity of working electrolyzers should be accompanied by more mechanization and better working conditions. There is 1 figure, 3 tables and 4 references, of which 3 are Soviet and 1 English.

ASSOCIATION: VAMI

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